

We Claim:

1. A method for filling a mold to make a cast article comprising the steps of:

5 providing a molten metal to a casting chamber in fluid communication with the mold, the casting chamber having a supply conduit for introducing a gas into the casting chamber, and the casting chamber having an evacuation conduit for delivering the molten metal from the casting chamber to the mold;

controlling the filling of the mold during a first time interval by delivering the molten metal from the casting chamber to the mold at a first rate; and

10 controlling the filling of the mold during a second time interval by delivering the molten metal from the casting chamber to the mold at a second rate,

wherein the filling of the mold decelerates from the first rate to the second rate and the second rate does not exceed the first rate.

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2. The method of claim 1 further comprising a providing a controller for controlling the first rate and the second rate.

3. A vehicle component produced in accord with the method of claim 1.

4. A method for filling a mold to make a cast article comprising the steps of:

providing a molten metal to a casting chamber, the casting chamber having a supply conduit for introducing a gas into the casting chamber, and the
5 casting chamber having an evacuation conduit for delivering the molten metal from the casting chamber to the mold;

providing a transducer and a controller;

during a first time interval controlling the filling of the mold by introducing the gas into the casting chamber at a first rate; and

10 during a second time interval controlling the filling of the mold by introducing the gas into the casting chamber at a second rate,

wherein the transducer sends a signal representative of the pressure in the casting chamber and the controller changes the filling of the mold from the first rate to the second rate.

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5. A vehicle component produced in accord with the method of claim 4.

6. A method for filling a mold to make a cast article comprising the steps of:

providing a molten metal to a casting chamber, the casting chamber having a supply conduit for introducing a gas into the casting chamber, and the
5 casting chamber having an evacuation conduit for delivering the molten metal from the casting chamber to the mold;

providing a desired fill profile for delivering the molten metal from the casting chamber to the mold;

detecting the pressure in the casting chamber;

10 providing a controller and sending a signal representative of the pressure in the casting chamber to the controller; and

changing the desired fill profile based upon the signal representative of the pressure in the casting chamber.

15 7. The method of claim 6 further comprising the step of providing a transducer to detect the pressure in the casting chamber.

8. The method of claim 6 further comprising the step of providing the molten metal to a casting chamber at a second rate based upon the signal
20 representative of the pressure in the casting chamber.

9. A vehicle component produced in accord with the method of claim 6.